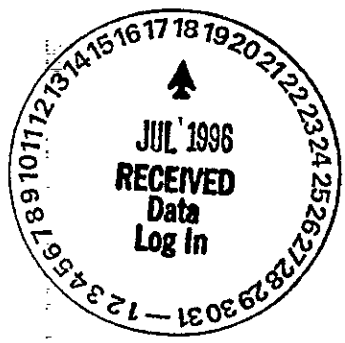
LK7246-LAS

Lockheed Environmental Systems & Technologies Co.
Lockheed Analytical Services
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

0046116

LOCKHEED MARTIN

July 11, 1996



Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352

RE:		
	Log-in No.:	L7246
	Quotation No.:	Q400000-B
	SAF:	B96-092
	Document File No.:	0615596
	BHI Document File No.:	375
	SDG No.:	LK7246

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 15 June 1996.

The temperature of the cooler upon receipt was 2°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples designated for hexachrome analysis were not received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Kathleen Hall at (509) 375-4741.

0003

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

" I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manger or a designee, as verified by the following signature."

Sincerely,

Karen Herman FOR

Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

CASE NARRATIVE
INORGANIC NON METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

- One water sample was received for LK7246 and analyzed in batch 615 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOHD33	L7246-3	MS, DUP	7246 Hexavalent Chromium

Holding Time Requirements

- All samples were received and analyzed outside of the method-specific holding times. The associated samples are flagged with an "H".

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
Prepared By

June 18, 1996
Date

CASE NARRATIVE
INORGANIC METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on June 15, 1996. The samples were logged in as L7246 and were prepared and analyzed in batch 615 bh. The samples were analyzed by Method 200.7 ICP Metals.

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Shellee McGrath
Prepared By

July 11, 1996
Date

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Jun 15 1996, 01:22 pm

Login Number: L7246
Account: 596 Bechtel Hanford, Inc. * Richland, WA
Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	PR	Due Date
L7246-1	B0HD33	13-JUN-96	15-JUN-96		20-JUL-96
TEMP 2					
Location: 157					
Water 1 S SCREENING		Hold:10-DEC-96			
L7246-2	B0HD33	13-JUN-96	15-JUN-96		20-JUL-96
TEMP 2					
Location: RFG02-36B					
Water 1 S 200.7 METALS		Hold:10-DEC-96			
L7246-3	B0HD33	13-JUN-96	15-JUN-96		20-JUL-96
TEMP 2					
Location: RFG02-36B					
Water 1 S 7196 CHROMIUM (VI)		Hold:14-JUN-96			
L7246-4	REPORT TYPE	15-JUN-96	15-JUN-96		20-JUL-96
Location:					
Water 1 S EDD - DISK DEL.					
Water 1 S INORG TYPE 4A RPT					

Signature: [signature]

Date: 6-15-96 0009

0061559

Bechtel Hanford, Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST L7246	Page 1 of 1 Data Turnaround ☐ Priority ■ Normal

Collector R.Fahlberg	Company Contact M.T. Stankovich	Telephone 372-9626
Project Designation 100-HR-3 Routine Process Samples	Sampling Location 100 Area	SAF No. B96-092
Ice Chest No. GS-24	Field Logbook No. EL-1309	Method of Shipment Hqnd Delivered
Shipped To Lockheed	Offsite Property No. ~~NA~~ DW 6-14-96 W96-0-0640-49	Bill of Lading/Air Bill No. ~~NA~~ BWL 6-14-96 Q904658276

Possible Sample Hazards/Remarks												
	Preservation	HNO3	cool to 4c	None								
	Type of Container	G/P	G/P	G/P								
	No. of Containers	1	1	1								
Special Handling and/or Storage	Volume	500mL	500mL	20mL								
SAMPLE ANALYSIS		ICP Metals, 2 Cr	Cr Hex	Activity Scan								
Sample No.	Matrix*	Date Sampled	Time Sampled									
B0HD33	W	6-13-96	0850	X	X	X			~~EFF~~ HF R.S 6-13-96			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time 1345	Received By GR BWhitton	Date/Time 1345 6-13-96
Relinquished By R Fahlberg	Date/Time 6/13/96 0900	Received By	Date/Time
Relinquished By GR BWhitton	Date/Time 6-14-96	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
Sample analysis for Chromium VI is requested for information only. The ERC contractor acknowledges the 24-hour holding time will not be met.

Matrix*
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
	Paul S Daniels	Sample Custodian	6-15-96 10:15
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SAMPLE CHECK-IN LIST

Date/Time Received: 6-15-96/ 9:15 SDG#: N/A

Work Order Number: N/A SAF #: B96-092

Shipping Container ID: GS-24 Chain of Custody # N/A

1. Custody Seals on shipping container intact? Yes [X] No [ ]
2. Custody Seals dated and signed? Yes [X] No [ ]
3. Sample temperature 28
4. Vermiculite/packing materials is Wet [ ] Dry [X]
5. Each sample is in a plastic bag? Yes [X] No [ ]
6. Sample holding times exceeded? Yes [X] No [ ]

7. Samples have:
   ___ tape
   _X_ custody seals
   ___ hazard labels
   ___ appropriate sample labels

8. Samples are:
   _✓_ in good condition
   ___ broken
   ___ leaking
   ___ have air bubbles

9. Is the information on the COC and Sample bottles in agreement?

Yes [X] No [ ]

Notes: ____________________

Sample Custodian/Laboratory: [signature] / LAS Date: 6-15-96

Faxed ~~Telephoned~~ To: Kathleen Hall On 6-15-96 By [signature]

PCD 6-15-96

0011 001559

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
CCN: N/A
OU: N/A
TSD: N/A
ERA: N/A
Subject Code: 3530

TO:	W. S. Thompson	N1-28	DATE:	February 29, 1996
	G. C. Henckel	H4-80		
COPIES:	K. A. Smith	X0-23	FROM:	S. K. De Mers
	T. L. Lafreniere	X0-23		Radiological Controls
	D. E. Gergely	X0-23		T7-05/373-1913

SUBJECT: **Total Activities for Off-Site Shipments of Groundwater Samples to NRC Licensed Laboratories**

There is no need to perform total activities prior to offsite shipment to NRC licensed labs of samples taken from ground water wells located on the Hanford Site.

All wells reviewed to date for radiological content have shown no well with a total activity in excess of 2,000,000 pCi/l (2,000 pCi/gm), the Department Of Transportation limit for radioactive material. The highest activity in any known well is 1.56×10^6 pCi/l H^3.

While this does not constitute any release from radiological controls for worker protection, it does allow samples to be shipped based on historical laboratory data and save the expense of doing radiochemical analysis.

A copy of the most recent analytical data should be provided to the NRC licensed laboratory with the samples being shipped or if no data is available for new wells, the most recent data from adjacent wells.

LOCKHEED MARTIN

Sample Login
Login Review Checklist

Lot Number L7246

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports form the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

SAMPLE SUMMARY REPORT	YES	NO	N/A	Comment
1. Are all sample ID's correct?	X			
2. Are all samples present?	X			
3. Are all matrices indicated correctly?	X			
4. Are all analyses on the COC logged in for the appropriate samples?	X			
5. Are all analyses logged in for the correct container?	X			
6. Are samples logged in according to LAS batching procedures?	X			

LOGIN CHAIN OF CUSTODY	YES	NO	N/A	Comment
1. Are the collect, receive, and due dates correct for every sample?	X			
2. Have all appropriate comments been indicated in the comment section?	X			

SAMPLE RECEIVING CHECKLIST	YES	NO	N/A	Comment
1. Are all discrepancies between the COC and the login noted (if applicable)?			X	

Paula Dana 5-15-96
primary review signature date

Paula Dana 6-15-96
secondary review signature date

0018C01559C

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: Westing House Job No. L7246 Cooler ID: n/a

COOLER CONDITION UPON RECEIPT			
Temperature of cooler upon receipt: 2°C			
temperature of temp, blank upon receipt:			
	Yes	No	* Comments/Discrepancies
custody seals intact	X		
chain of custody present	X		
blue ice (or equiv.) present/frozen	X		
rad survey completed	X		

SAMPLE CONDITION UPON RECEIPT			
	Yes	No	* Comments/Discrepancies
all bottles labeled	X		
samples intact	X		
proper container used for sample type	X		
sample volume sufficient for analysis	X		
proper pres. indicated on the COC	X		
VOA's contain headspace		n/a	
are samples bi-phasic (if so, indicate sample ID'S):		n/a	

MISCELLANEOUS ITEMS			
	Yes	No	* Comments/Discrepancies
samples with short holding times	X		Chromium VI was passed 24 hrs Holding Time
samples to subcontract		n/a	

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Paul [signature] 6-25-95

Sent to the client (date/initials): ** Client's signature upon receipt:

*Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt*

*** = please review this information and return via facsimille to the appropriate CSR (702) 361-8146*

0010/0155

version 2.0 (11/11/94)

Lockheed Analytical Laboratory
SAMPLE SUMMARY REPORT (su02)
Bechtel Hanford, Inc. * Richland, WA

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
B0HD33	L7246-1		Water	SCREENING
	L7246-2		Water	200.7 METALS
	L7246-3		Water	7196 CHROMIUM (\
REPORT TYPE	L7246-4		Water	EDD - DISK DEL.
	L7246-4		Water	INORG TYPE 4A RI

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HD33	Date Collected: 13-JUN-96
Matrix: Water	Date Received: 15-JUN-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	0.80	0.10	HD(1:5)	17-JUN-96	38146	L7246-3

Lockheed Analytical Laboratory

Determination of Hexavalent Chromium Calibration and Calibration Verification Results

LAL Batch ID: 615-BH
Work Group: 7196 CHROMIUM (VI)_38146
Method: 7196 (Hexavalent Chromium)

Calibration Results

Standard Concentration (mg/L)	Measured Instrument Response	Linearized Instrument Response	Calculated Concentration (mg/L)	Standard Recovery (%)
0.000	0.000	0.000	-0.002	
0.025	0.021	0.021	0.025	99
0.050	0.043	0.043	0.052	105
0.100	0.081	0.081	0.100	100
0.200	0.161	0.161	0.200	100
0.250	0.200	0.200	0.249	100

Slope = 1.2544
Intercept = -0.0016
Correlation (r) = 0.9999

Measured Instrument Response: Absorbance (540 nm)

Calibration Verification Results

Sample Identification	True Concentration (mg/L)	Found Concentration (mg/L)	Analyte Recovery (%)
ICV	0.1	0.105	105
CCV	0.1	0.106	106

Calibration Blank Results

Sample Identification	Analyte Found (mg/L)
ICB	0.003 U
CCB	0.003 U

Lockheed Analytical Laboratory

Determination of Hexavalent Chromium
Quality Control Results

LAL Batch ID: 615-BH
Work Group: 7196 CHROMIUM (VI)_38146
Method: 7196 (Hexavalent Chromium)

Laboratory Control Sample/Duplicate Results (Recovery)

Sample Identification	True Concentration (mg/L)	Found Concentration (mg/L)	Analyte Recovery (%)
LCS	0.05	0.050	100
LCSD		(No LCSD analyzed)	

Laboratory Control Sample/Duplicate Results (Difference)

LCS Result (mg/L)	LCSD Result (mg/L)	Relative Difference (%)	Flag
	(No LCSD analyzed)		

Preparation Blank Results

Sample Identification	Analyte Found (mg/L)
PB	0.011 B

Sample Duplicate Results (Difference)

LAL Sample Identification	Sample Result (mg/L)	Duplicate Result (mg/L)	Relative Difference (%)	Flag
L7246-3	0.795	0.788	1	

Spiked Sample/Spike Duplicate Results (Recovery)

LAL Sample Identification	Sample Result (mg/L)	Analyte Added (mg/L)	Spike Result (mg/L)	Spike Recovery (%)	Flag
L7246-3S	0.795	0.25	1.052	103	

Spiked Sample/Spike Duplicate Results (Difference)

Spike Result (mg/L)	Spike Dup Result (mg/L)	Relative Difference (%)	Flag
	(No spike duplicate analyzed)		

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HD33	Date Collected: 13-JUN-96
Matrix: Water	Date Received: 15-JUN-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
CHROMIUM	mg/L	200.7	0.74	0.0060	0.010		1	05-JUL-96	38147	L7246-2